

202206UECM34630E4b

Start again

Review of preview

Started on	Thursday, 8 September 2022, 11:40 AM
Completed on	Thursday, 8 September 2022, 11:40 AM
Time taken	5 secs
Marks	0/8
Grade	0 out of a maximum of 10 (0%)

1

Marks: 1

You fit a Pareto distribution with parameters α and $\theta = 90$ to a sample of 280 claim amounts. You are given $\sum_{i=1}^n \ln(x_i + 90) = 1485.64$. Determine the value of the Bayesian Information Criterion (BIC). _____

Answer:

✗

[Make comment or override grade](#)

Incorrect

Correct answer: 3416.17479

Marks for this submission: 0/1.

2

Marks: 1

You fit a Gamma distribution to a sample of 90 claim amounts. You are given:

- The maximum likelihood estimates are $\hat{\alpha} = 3$ and $\hat{\theta} = 74.98$.
- $\sum x_i = 20244.99$
- $\sum \ln(x_i) = 473.66$

Determine the value of the Bayesian Information Criterion (BIC). _____

Answer:

✗

[Make comment or override grade](#)

Incorrect

Correct answer: 1110.439619

Marks for this submission: 0/1.

3

Marks: 1

You fit various models for 31 loss observations using maximum likelihood. The fits maximizing the likelihood for a given number of parameters have the following loglikelihoods:

Number of parameters	Loglikelihood
1	-141.52
2	-140.03
3	-133.3
4	-130.1
5	-108.41

If BIC is the value of the Bayesian Information Criterion, and k is the number parameters in the selected models. Find $BIC+k$. _____

Answer:

✗

[Make comment or override grade](#)

Incorrect
Correct answer: 239
Marks for this submission: 0/1.

4

Marks: 1

You are given a sample of 5 observations from Pareto(α , $\theta = 1490$) distribution:

1,784.62 2,279.43 1,491.06 1,680.98 1,571.95.

Determine the value of the Bayesian Information Criterion (BIC). _____

Answer:

[Make comment or override grade](#)

Incorrect

Correct answer: 89.919838

Marks for this submission: 0/1.

5

Marks: 1

You fit a Pareto distribution to a sample of 150 claim amounts. You are given:

- The maximum likelihood estimates are $\hat{\alpha} = 2.0$ and $\hat{\theta} = 7.2$.
- $\sum \ln(x_i + 7.2) = 610.54$

Determine the value of the Akaike Information Criterion (AIC). _____

Answer:

[Make comment or override grade](#)

Incorrect

Correct answer: 2274.84

Marks for this submission: 0/1.

6

Marks: 1

You fit a Gamma distribution to a sample of 100 claim amounts. You are given:

- The maximum likelihood estimates are $\hat{\alpha} = 4$ and $\hat{\theta} = 88.86$.
- $\sum x_i = 35545.41$
- $\sum \ln(x_i) = 577.67$

Determine the value of the Akaike Information Criterion (AIC). _____

Answer:

[Make comment or override grade](#)

Incorrect

Correct answer: 1286.02

Marks for this submission: 0/1.

7

Marks: 1

You fit various models for 27 loss observations using maximum likelihood. The fits maximizing the likelihood for a given number of parameters have the following loglikelihoods:

Number of parameters	Loglikelihood
1	-141.58
2	-140.84
3	-139.39
4	-137.85
5	-136.81

IF AIC is the value Akaike Information Criterion (AIC), and k is the number parameters in the selected models. Find AIC+k. _____

Answer:

[Make comment or override grade](#)

Incorrect

Correct answer: 287

Marks for this submission: 0/1.

8

Marks: 1

You are given a sample of 10 observations from the following distribution:

Marks: 1

$f(x) = 1/(2\theta^3)x^2e^{-x/\theta}, x>0$

x ₁	x ₂	x ₃	x ₄	x ₅	x ₆	x ₇	x ₈	x ₉	x ₁₀
104.57	131.88	34.78	77.56	65.81	73.76	140.04	62.77	134.94	260.22

Determine the value of the Akaike Information Criterion (AIC). _____

Answer:



[Make comment or override grade](#)

Incorrect

Correct answer: 111.84

109.34

Marks for this submission: 0/1.

[Moodle Docs for this page](#)

You are logged in as [Yong Chin Khian \(Logout\)](#)

UECM3463-202206-EZZ